

t22_normform
(TMQNNRyzugSrCurQCSCFX6uS7etcRbj1Yvy)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_setwiseo : \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_normform : \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\ & X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (((v1_binop_1 X2 X0) \wedge ((v2_binop_1 X2 X0) \wedge (v1_setwiseo \\ & X2 X0))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (k7_setwiseo \\ & X1 X0 X2 (k1_setwiseo X1) X3 = k4_binop_1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X1 \\
& X1) X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))))) \Rightarrow (((v1_binop_1 X2 X1) \wedge ((v2_binop_1 X2 X1) \wedge (v3_binop_1 \\
& X2 X1))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge \\
& (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (\forall X4. \\
& ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))))) \Rightarrow (\forall X5.(m1_subset_1 X5 (k5_finsub_1 \\
& X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 (k5_finsub_1 X0)) \Rightarrow ((k7_relset_1 \\
& X0 X1 X3 X5 = k7_relset_1 X0 X1 X4 X6) \Rightarrow ((X5 = k1_xboole_0) \vee (k7_setwiseo \\
& X0 X1 X2 X5 X3 = k7_setwiseo X0 X1 X2 X6 X4)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.k4_binop_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\
& X0)) (k5_normform X0) = k1_domain_1 (k5_finsub_1 X0) (k5_finsub_1 \\
& X0) (k1_setwiseo X0) (k1_setwiseo X0)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.v1_setwiseo (k5_normform X0) (k2_zfmisc_1 (k5_finsub_1 \\
& X0) (k5_finsub_1 X0))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(v1_relat_1 X1) \Rightarrow (\forall X2.(v1_relat_1 \\
& X2) \Rightarrow ((k5_relat_1 X1 X0 = k5_relat_1 X2 X0) \Rightarrow (k7_relat_1 X1 X0 = k7_relat_1 \\
& X2 X0)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (\\
& k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (k7_relset_1 X0 X1 X2 X3 = k7_relat_1 \\
& X2 X3)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\
& (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3)
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \tag{9}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_funct_1 (k5_normform X0)) \wedge ((v1_funct_2 (k5_normform \\ & X0) (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) \\ & (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0))) \wedge ((v1_binop_1 (k5_normform \\ & X0) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) \wedge ((v2_binop_1 \\ & (k5_normform X0) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) \wedge \\ & (v3_binop_1 (k5_normform X0) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\ & X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow \\ & (\neg v1_xboole_0 (k2_zfmisc_1 X0 X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_funct_1 (k5_normform X0)) \wedge ((v1_funct_2 (k5_normform \\ & X0) (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) \\ & (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0))) \wedge (m1_subset_1 (k5_normform \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 \\ & X0) (k5_finsub_1 X0)) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\ & X0))) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboole_0 (k1_setwiseo X0)) \wedge (m1_subset_1 (k1_setwiseo \\ & X0) (k5_finsub_1 X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.\forall X2.(m1_subset_1 \\ & X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 X0 (k2_zfmisc_1 (k5_finsub_1 X1) (k5_finsub_1 X1))) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (k2_zfmisc_1 (k5_finsub_1 X1) \\ & (k5_finsub_1 X1)))))) \Rightarrow (k6_normform X0 X1 X2 X3 = k7_setwiseo X0 \\ & (k2_zfmisc_1 (k5_finsub_1 X1) (k5_finsub_1 X1)) (k5_normform \\ & X1) X2 X3))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_relat_1 X1)) \end{aligned} \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k5_finsub_1 X1))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 \\ & X3 X1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)))\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 (k2_zfmisc_1 (k5_finsub_1 X0) \\ & (k5_finsub_1 X0))))))\Rightarrow(\forall X4.((v1_funct_1 X4)\wedge((v1_funct_2 \\ & X4 X1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)))\wedge(m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 (k2_zfmisc_1 (k5_finsub_1 X0) \\ & (k5_finsub_1 X0))))))\Rightarrow((k5_relat_1 X3 X2 = k5_relat_1 X4 X2)\Rightarrow \\ & (k6_normform X1 X0 X2 X3 = k6_normform X1 X0 X2 X4)))))) \end{aligned}$$